



RIVERSIDE PUBLIC UTILITIES

Board Memorandum

BOARD OF PUBLIC UTILITIES

DATE: JULY 27, 2026

SUBJECT: ENERGY STORAGE REBATE PROGRAM IMPLEMENTATION FOR RESIDENTIAL DEMAND SIDE MANAGEMENT INCENTIVES USING PUBLIC BENEFITS CASH RESERVES FOR A TOTAL OF \$5,000,000 – SUPPLEMENTAL APPROPRIATION

ISSUE:

Consider approving implementation of a new energy storage rebate program for residential demand side management incentives using Public Benefits Cash Reserves for a total amount of \$5,000,000.

RECOMMENDATIONS:

That the Board of Public Utilities recommends that the City Council:

1. Approve implementation of a new energy storage rebate program for residential demand side management incentives;
2. With at least five affirmative votes, authorize the Chief Financial Officer, or designee, to record a supplemental appropriation in the total amount of \$5,000,000 from the Electric Public Benefits Fund, Public Benefits Cash Reserves and appropriate expenditures to the Electric Public Benefits Fund, Energy Storage Rebate Program Account; and
3. Authorize the City Manager, or designee, to execute the Energy Storage Rebate Program and take all necessary actions required or advisable to implement, administer, fund, and carry out the City of Riverside's responsibilities under the Energy Storage Rebate Program, including making minor and non-substantive changes to the program, and to execute future amendments to the Energy Storage Rebate Program incentive amounts under substantially similar terms and conditions.

LEGISLATIVE HISTORY:

Energy efficiency, demand reduction, and energy conservation have been and continue to be a priority of the State of California. They are all seen as a cost-effective means of supporting the energy grid. In state-wide energy planning, avoided energy use, whether in the day or at peak hours, translates into lower costs for everyone by avoiding the need for new generation facilities and expanded transmission and distribution systems. The State has also focused on renewables, including the efficient use of renewables, and the ability to specifically shift solar energy production

to peak hours through the use of energy storage. Every customer benefits from those that participate in energy efficiency rebate programs through reduced costs to build, operate and maintain grid and generation infrastructure.

The following bills have supported energy efficiency as part of the statewide loading order for generation resources and for the development of programs that help customers as they make decisions to be more energy efficient.

1. Assembly Bill (AB) 1890 (Brulte, 1996) required that 2.85% of electric revenue be utilized to fund public benefits programming in at least one of four areas: demand side management (energy efficiency), renewable energy, low-income assistance, or research, development, and demonstration.
2. Senate Bill (SB) 1939 (Alarcon, 2000) required utilities that had not implemented programs for low-income electricity customers to prepare a needs assessment for those customers.
3. SB 2x-2 (Alarcon, 2001) expanded the requirements around the needs assessment to include the requirement that publicly owned utilities consider increasing the level of discounts or raising eligibility levels to reflect customer need, streamline enrollment, and to establish participation goals.
4. SB 1037 (Kehoe, 2005) set ambitious energy conservation policies and goals requiring publicly owned utilities (POU's) to report annually the kilowatt hour (kWh) savings to the California Energy Commission (CEC) and to its customers.
5. AB 2021 (Levine, 2006) required all California POU's beginning in 2007, and every three years thereafter, to identify all potentially achievable cost-effective energy efficient savings and establish annual targets for energy savings and demand reduction over a ten-year period.
6. AB 2227 (Bradford, 2012) changed the frequency of the energy efficiency ten-year target setting requirements of AB 2021 from once every three years to once every four years.
7. SB 350 (De Leon, 2015) establishes annual targets for statewide energy efficiency savings and demand reduction that will achieve a cumulative doubling of statewide energy efficiency savings in electricity and natural gas by January 1, 2030. The bill requires local POU's to establish annual targets for energy efficiency savings and demand reduction consistent with this goal.

BACKGROUND:

Riverside Public Utilities (RPU) is required by state law to establish energy efficiency goals and administer energy efficiency programs funded through the state-mandated Public Benefits Charge (PBC).

In January 1998, per AB 1890, RPU began collecting the State mandated PBC on customer utility bills. The PBC Surcharge requires a minimum 2.85% charge on all electric sales to implement programs within four specific categories. These include:

1. Residential and Commercial Energy Efficiency and Energy Conservation Programs

2. New Investment in Renewable Energy
3. Low-Income Assistance Programs and Education
4. Research, Demonstration and Development

As the landscape of the regulation and resources for energy efficiency and grid reliability changes, RPU continuously reviews and assesses existing programs and needs of the utility and its customers for enhancements and opportunities to introduce new programs meeting the guidelines. This is done in parallel with maintaining reliability, ensuring safety, and establishing cost-effective incentives and programs for RPU customers to benefit from.

On January 13, 2025, the RPU Board was provided with an update on the variety of programs and services that are funded with the PBC funds and the accumulation of funds in the Public Benefits Energy Surcharge Fund reserve account (PBC reserve funds). Staff informed the Board that \$32 million was available in the PBC reserve funds. The Board requested that staff return to the RPU Board with a spending plan that included timelines for each project or program proposed. (Note that the PBC reserve funds had grown to \$34 million by the start of fiscal year 2025/2026.)

On April 22, 2025, Mayor Lock Dawson requested staff to establish a task force for the mandated energy efficiency programs and for utility bill support for low-income residents to include knowledgeable stakeholders and members of the community to determine the best way to spend the PBC reserve funds to serve Riverside Public Utilities' customers and present its findings to the Board of Public Utilities and City Council by the end of 2025.

RPU worked with community members, forming a Public Benefits Charge Community Working Group in June 2025. The Working Group met four times between July 2025 and January 2026 and developed six programs to propose to the Board of Public Utilities and City Council. These programs include the following:

	Program	Timeline	Funding
1.	Residential Energy Storage Rebate Program	5 years	\$5,000,000
2.	Community and Emergency Centers Solar PV, Battery Storage, and Energy Efficiency Rebate Program	6 years	\$12,000,000
3.	Resiliency at the Utility Operations Center and City Emergency Operations Center Solar and Battery Rebate Program	3 years	\$5,000,000
4.	Residential Battery Energy Storage or Solar with Battery Energy Storage Pilot Program for residential to test high concentration of battery and solar and potential demand response programs (limited area)	5 years	\$9,000,000
5.	Energy Savings Assistance Program and Mobile Home and Multifamily Program (expansion of existing programs)	2 years	\$2,000,000
6.	Riverside Universities Research Grant Program (expansion of existing program)	4 years	\$1,000,000
Total		2-6 years	\$34,000,000

On April 27, 2026 and on June 16, 2026 the Board and City Council, respectively, approved the proposed spending plan including flexibility in the dollar amounts over time to ensure that funds are being spent in a timely manner and that programs are successful. The Residential Energy Storage Rebate Program is the first new program that will implement the Public Benefit Fund Spending Plan.

DISCUSSION:

RPU is proposing a new residential customer rebate program named the Energy Storage Rebate Program. With growing demand on the grid during peak hours, RPU staff aimed to develop a program that would support customer resiliency, improve the effectiveness of customer-sited solar generation to support customers and reduce grid impacts and to improve grid reliability in addition to meeting state mandates on energy efficiency. Due to the ability to store and discharge energy at specified times, energy storage systems can provide reductions of peak demand, which improves grid reliability and reduces costs associated with purchasing power during peak prices.

Comparable Utility Energy Storage Rebate Programs

A comparison of other utilities in California and across the country having similar rebate programs was compiled and is provided for reference in this report. In reviewing the limited number of utilities with similar energy storage programs, most were only designed for residential customers, still in the pilot stages, and only focused on battery storage technology. In addition, many of the programs required a customer to either have an existing solar photovoltaic (PV) system or to install a solar PV system simultaneously with the battery storage system.

Utility	Program Name	Incentive	Technology	Size	Requirements
Anaheim Public Utilities	Residential Energy Storage Pilot Program	Up to \$3,000 per household	Eligible energy storage unit must meet the size minimum requirement	Minimum size of 5 kWh	Must be on a TOU rate, part of existing solar system, and sign up for DR program
Silicon Valley Power	Battery Storage Rebate	Up to \$2,700 per household and extra \$2,000 for low-income	Approved list of equipment brands	Minimum size of 3 kWh	Must have existing solar system or install solar with battery storage
Sacramento Municipal Utility District	My Energy Optimizer Partner+ Incentive (aka Battery Storage Incentive Program)	Enrollment incentive varies by brand and size with maximum up to \$10,000 per household	Approved list of equipment brands	No minimum, based on the approved list of eligible brands	Must be on a TOU rate and sign up for DR program
Fort Collins Utilities	Residential Battery Storage	\$300/kWh capacity up to \$6,000 maximum incentive	Approved list of equipment brands	Minimum size of 6 kWh	Must be sold and installed by approved contractor and be on a TOU rate

Utility	Program Name	Incentive	Technology	Size	Requirements
Duke Energy	PowerPair Solar and Battery Installation Pilot Program	\$400/kWh up to 13.5 kWh size; maximum incentive of \$9,000 based on PV system size and battery capacity	Approved list of equipment brands limited to maximum capacity of 13.5 kWh	No minimum, but limited to maximum size of 13.5 kWh	Must be new solar installation with battery storage, be on a TOU rate, and use approved contractor

California's investor-owned utilities also provide rebates for energy storage to support customer grid resiliency, primarily during Public Safety Power Shutoffs. Rebates range from \$150/kWh for residential customers to \$1100/kWh for low-income residential customers.

Program Cost Effectiveness – Avoided Costs

To determine the cost effectiveness of the energy storage program, staff analyzed the avoided cost of load shifting that energy storage systems could provide at the utility and customer level, respectively. Avoided cost analysis (determining costs that RPU would not incur) is a primary methodology used to determine the value of and cost effectiveness of energy efficiency and battery storage programs. The analysis and assumptions were based on a typical lithium-ion battery technology with a 13.5 kWh capacity with an average system cost of \$8,200 (note that battery pricing varies depending on brand and size). This did not include installation costs and other associated costs or potential increases or decreases in equipment pricing over time.

The methodology used to account for the local distribution level benefits was based on the California Public Utilities Commission's 2024 Distributed Energy Resources Avoided Cost Calculator Documentation (see attachment) but inputs and assumptions are specific to RPU's local distribution system. Distribution level avoided costs analyzed the circuits and transformers close to (or above) their capacity limits. Each one was identified and the cost for the standard utility upgrade necessary to address the constraint was calculated including the full project cost and major cost components. By converting the upfront project costs for extra capacity upgrades into an annual cost (including the annual operations and maintenance costs) the analysis of the deferred need for the infrastructure update based on timing and cost growth was applied to develop the avoided distribution system losses (capacity constraints).

Staff identified where RPU would see cost savings at the utility and distribution level in avoided costs due to load shifting based on an evaluation and analysis specific to its system profile and customer needs. Utility level avoided costs analyzed the avoided local energy costs associated with shifting daily loads from the evening into midday hours, avoided system capacity costs (i.e., system resource adequacy capacity costs), avoided greenhouse gas (GHG) carbon credit, and avoided distribution system losses. The methodology utilized to account for these avoided cost components was adapted from the current avoided cost of energy methodology for determining the value of renewable energy from customer owned distributed energy resources, specifically solar PV resources.

Combining the above analyses, staff also considered the energy storage system's output and dispatchable time periods and assumed degradation over ten years to determine a 10-year value per installed kWh. The detailed analysis identified an avoided cost of approximately \$465/kWh total including both the avoided costs associated with procured energy and the potential avoided

or delayed distribution upgrade costs as referenced above. The full methodology and analyses are attached, and are summarized as follows:

Avoided Distribution Infrastructure Costs + Avoided System Capacity Costs + Avoided GHG Carbon Credit + Avoided Distribution System Losses = Avoided Cost of Load Shifting Value (converted to Loss Adjusted Annual \$ Value)

Including the above with the expected dispatchable time periods and an energy storage system's degradation over a 10-year period can be summarized as:

Loss Adjusted Annual \$ Value x 10 years – Battery Degradation = approximately \$465 per kWh (10-year value per installed kWh)

While performing the quantitative analysis, staff made inquiries into other California public utilities that could be contacted and did not find any, other than the investor-owned utilities had completed avoided cost of load shifting analyses for their programs. They based their rebate on the methodology justification developed by the California Public Utilities Commission and their utilities' unique funding availability.

Proposed Residential Energy Storage Rebate Program

This new program would provide a rebate to residential customers who purchase an energy storage system. (Note that additional analysis is needed to develop a commercial energy storage rebate program.) The rebate would be technology agnostic and apply to any energy storage technology with the ability to store energy during non-peak periods and discharge during peak periods. All participants would be required to participate in the Domestic time-of-use (TOU), Self-Gen Domestic-TOU, or the applicable domestic TOU electric rate available at the time the rebate is approved.

An existing customer would need to remain on or switch to one of the above electric TOU Service rates, if adding an energy storage system to qualify for the rebate in the following situations:

1. Existing residential customers participating in the self-generation rate.
2. Existing residential customers on the net energy metering rate.
3. Existing residential customers who install a standalone energy storage system.
4. Existing residential customers who install both a solar system and energy storage system simultaneously.

The technologies currently available include battery energy storage systems and thermal energy storage systems (related to air cooling systems). There is the potential for other emerging technologies to qualify as an allowable energy storage system technology in the future.

The Energy Storage Rebate program would be structured as follows:

1. Proposed program budget of \$5 million utilizing Public Benefits Energy Surcharge Fund Available Reserves.
2. Upon approval, rebates will be available retroactively for customers starting fiscal year July 1, 2026 to accommodate ratepayers who have recently installed or are in the process of installing an energy storage system.

3. Residential customers installing an applicable energy storage system would receive a rebate based on \$500/kWh capacity up to \$10,000 per rebate not to exceed total project cost (i.e., equipment and associated installation costs) and limited to one rebate per year.
4. Low-income residential customers that meet RPU's Sharing Households Assist Riverside's Energy (SHARE) program requirements would receive a rebate based on \$850/kWh capacity up to \$17,000 not to exceed total project costs (i.e., equipment and associated installation costs) and limited to one rebate per year.
5. Customers are required to be on or switch to the current applicable domestic TOU rate.
6. No restrictions on kWh capacity of equipment procured.
7. Customers may reapply if they move to a new location and install a new energy storage system that meets the program requirements.
8. No restrictions on brand or type of energy storage system.
9. Eligibility can be for existing solar customers, new solar customers, or standalone energy storage system installations.
10. Documentation required for program eligibility:
 - a. Proof of purchase showing ownership and associated installation receipts with installation at address identified on the customer account
 - b. Copy of completed building permit with inspection sign off
 - c. Photo of the installed energy storage system
 - d. Photo of serial number on energy storage system matching invoice
 - e. Customer Acknowledgement of requirement to be on applicable domestic TOU rate

Next Steps

RPU will be providing marketing and outreach for this program. The effort will include messaging on the back of bill, social media, websites, and a press release. RPU's website will be updated, and staff will market the program at in-person events throughout the community.

Assessment and tracking of the new program will be done on a continual basis to determine its success and lessons learned for existing and future programs. The program will be updated and future funding added as the program is implemented.

A commercial energy storage program is currently being evaluated and, if it is determined to be feasible and beneficial to RPU and the utility's customers and if funding is available, will be brought to the Board and City Council for future approval. A commercial TOU rate will need to be developed to support the development of such a program. Additional research and analysis are needed to assess the available technologies, size and capacity, and impact on grid reliability.

In addition, the potential for future demand response programs is under review and may be combined as an add-on to the new proposed program.

FISCAL IMPACT:

Total fiscal impact is \$5,000,000. Upon Council approval, a supplemental appropriation in the amount of \$5,000,000 will be appropriated from the Electric Public Benefits Fund, Public Benefits Cash Reserves to the Electric Public Benefits Fund, Energy Storage Rebate Program Account No. 6020100-456111 to fully fund the program for FY 26/27 and through the duration of the program.

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Certified as to availability of funds:	Julie Nemes, Interim Finance Director
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Attachments:

1. RPU Avoided Cost of Load Shifting Methodology
2. CPUC 2024 Distributed Energy Resources Avoided Cost Calculator Documentation
3. Presentation